AGENCY OF ENVIRONMENTAL CONSERVATION

DEPARTMENT OF FORESTS, PARKS AND RECREATION

STATE OF VERMONT

FOREST INSECT AND DISEASE CONDITIONS

SOUTHERN REGION

CALENDAR YEAR 1985

PREPARED BY: Barbara S. Burns,
Specialist, Forest Resource Protection

John P. Barrows
Peter J. Norkeveck
Allan D. Sands
Forest Resource Protection Technicians

INTRODUCTION

The information in this report is based largely on aerial surveys to detect defoliation, as well as ground surveys and observations of Forest Resource Protection personnel and other forestry staff. District wide aerial surveys were flown in late August (District I: 8/29, District II: 8/22), to detect defoliation and mortality. A special survey to evaluate thrips damage was flown in Bennington County and southern Rutland County in late June. Diagnostic assistance was provided by the University of Vermont.

The winter of 1984 began with seasonable temperatures, and snowfall somewhat below normal. Spring began with a dry April and early May. A hard frost occurred on May 9. Temperatures were seasonable, with a wetter than normal early summer, and a dry August. Several periods of extended rainfall occurred in September (Figure 1).

Growing conditions over the season were generally good. Dry conditions in August did generate stress symptoms on droughty sites. Oak areas regionwide produced a heavy crop of acorns.

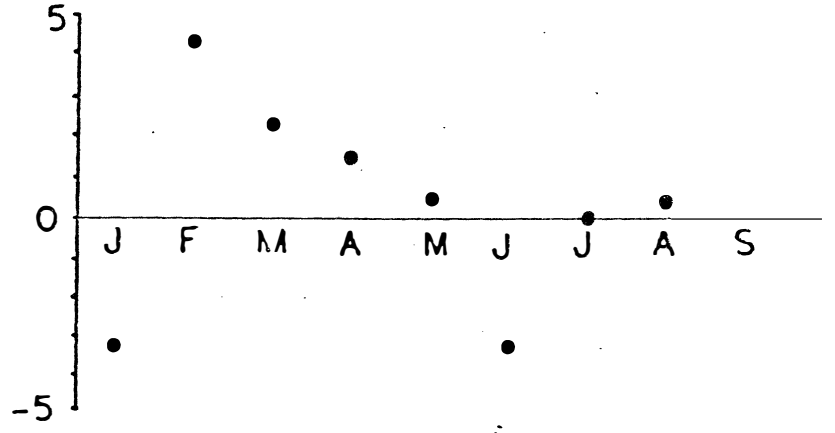
FIGURE 1: 1985 MONTHLY WEATHER SUMMARY

Data From NOAA Local Climatological Data

Monthly Summary - Burlington International Airport

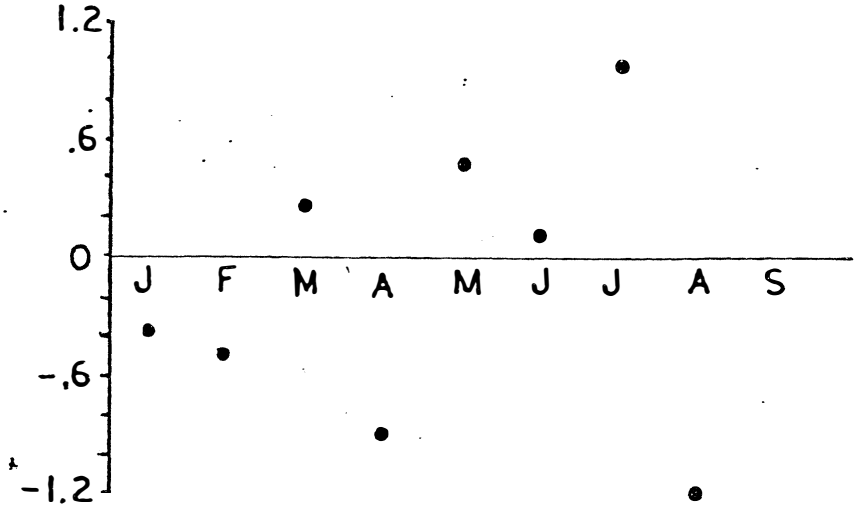
TEMPERATURE (^{o}F)

Departure From Normal



PRECIPITATION (IN)

Departure From Normal



Field data is complete for a statewide impact assessment survey. Results will be available in early 1986.

HARDWOOD DEFOLIATORS

INSECT	HOST(S)	LOCALITY	REMARKS
Birch Leaf Miner *Fenusa pusilla*	White Birch Grey Birch	Widespread	Increased damage throughout. Concentrated damage south of Barnard Village.
Birch Leaf Folder *Ancylis discigerana*			Not observed.
Birch Skeletonizer *Bucculatrix canadensisella*			Not observed.
Bruce Spanworm *Operophtera bruceata*			Not observed.
Eastern Tent Caterpillar *Malacosoma americanum*	Apple	Windham Co.	Nests & damage more evident than in 1984.
Elm Leaf Beatle *Pyrrhalta luteola*			Not observed.
Fall Cankerworm *Alsophila pometaria*			Not observed.

FOREST INSECTS

Hardwood Defoliators

Gypsy Moth, Lymantria dispar, populations remain stable at low levels. Populations initially showed a moderate increase, with larva counts dropping dramatically during the final instars. Monitoring of gypsy moth life stages using burlap bands and pheromone traps has continued on two sites each in Bennington and Rutland Counties, and one site in Windham County.

Assistance was provided to a cooperative project between the University of Vermont and the U. S. Forest Service. This was a trial of population disruption through release of eggs which produce sterile adults. Details of this project can be obtained from Dr. Bruce Parker at the University of Vermont.

Monitoring of red oak mortality, first observed in 1982 following several years' defoliation by the gypsy moth, continued on four plots in Glen Lake State Forest. After three growing seasons, there is no additional mortality, and little change in the remaining trees.

Maple Leaf Cutter, Paraclemensia acerifoliella, damage was not detectable from the air. Populations are light, but building in the eastern half of the region, and have declined and caused less damage in the western half. A sugarbush in Sherburne has very light damage compared to 1984. Light damage was also found in a West Pawlet sugarbush.

Forest Tent Caterpillar, Malacosoma disstria, caused no defoliation. Individual larvae were observed in Rutland and Cavendish. Pheromone traps placed on Rochester Mountain in Bethel yielded two adults.

HARDWOOD DEFOLIATORS

INSECT	HOST(S)	LOCALITY	REMARKS
Fall Webworm *Hyphantrea cunea*	Cherry, Butternut & others	Throughout	Heavy in scattered roadside locations, including Bethel, Poultney, Putney & Springfield.
Forest Tent Caterpillar *Malacosoma disstria*			See write-up.
Green Striped Mapleworm *Anisota rubicunda*	Sugar Maple	Brattleboro	Individual larvae observed.
Gypsy Moth *Lymantria dispar*			See write-up.
Half Winged Geometer *Phigalia titea*			Not observed.
Large Aspen Tortrix *Choristoneura conflictana*			Not observed.

HARDWOOD DEFOLIATORS

INSECT	HOST(S)	LOCALITY	REMARKS
Linden Looper *Erranis tiliaria*			Not observed.
Locust Leaf Miner *Odontata dorsalis*	Black Locust	Putney, Hartland	Damage in Putney very heavy.
Maple Leaf Cutter *Paraclemensia acerifoliella*			See write-up.
Maple Trumpet Skeletonizer *Epinotia aceriella*			Not observed.
Maple Webworm *Tetralopha asperatella*			Not observed.
Mountain Ash Sawfly *Pristophora genicultata*	Mountain Ash	Rutland Co.	On ornamentals.

HARDWOOD DEFOLIATORS

INSECT	HOST(S)	LOCALITY	REMARKS
Pin Oak Sawfly *Caliroa sp.*			Not observed.
Saddled Prominent *Heterocampa guttivata*		Stockbridge Mendon Woodford	Individual larvae or pupa cases only.
Satin Moth *Leucoma salicis*			Not observed.
Solitary Leaf Roller *Sparganothis pettitana*	Sugar Maple		Not observed.
Spring Cankerworm *Paleacrita vernata*			Not observed.
Uglynest Caterpillar *Archips cerasivoranus*	Cherry	Stockbridge	Roadside trees.

HARDWOOD DEFOLIATORS

INSECT	HOST(S)	LOCALITY	REMARKS
American Dagger Moth *Acronicta americana*	Sugar Maple	Throughout	Light defoliation, Larvae common.
Maple Petiole Borer *Caulocampus acericaulis*	Sugar Maple	Ira	Defoliation on reproduction.
Hickory Tussock Moth *Halisidata carpae*		Throughout	No visible defoliation.
Oak Skeletonizer *Bucculatrix Ainsliella*	Red Oak	Bennington Co.	Moderate to heavy damage in forested areas. Up to 90% of individual crowns skeletonized. Populations expected to remain high in 1986.

SOFTWOOD DEFOLIATORS

INSECT	HOST(S)	LOCALITY	REMARKS
Arborvitae Leaf Miner *Argyresthia thuiella*			Not observed.
Introduced Pine Sawfly *Diprion similis*			Not observed.
Larch Casebearer *Coleophora laricella*			Not observed.
Larch Sawfly *Pristophora erichosonii*			Not observed.
Red Headed Pine Sawfly *Neodiprion lecontei*			Not observed.
Spruce Budworm *Choristoneura fumiferana*			Six U.S.Forest Service pheromone traps on the GMNF yielded no moths - a decrease from 1984.

SOFTWOOD DEFOLIATORS

INSECT	HOST(S)	LOCALITY	REMARKS
Spruce Bud Moth *Zeiraphera canadensis*			Not observed.
White Pine Sawfly *Neodiprion pinetum*			Not observed.
Yellow-headed Spruce Sawfly *Pikonema alaskensis*			Not observed.
European Pine Sawfly *Neodiprion sertifer*		Throughout	Observed in scattered locations including Clarendon, Chittenden and Shaftsbury. Heavy bird predation.

SAPSUCKING INSECTS, MIDGES AND MITES

Pear Thrips, Taeniothrips inconsequens, were responsible for damage to maple foliage throughout the region early in the season. This insect feeds on developing buds and young foliage, causing distorted, tattered leaves, yellowing, mottling, leaf scorch and scarred leaf veins and stalks. Browned, tattered leaves superficially resemble frost damage.

A limited aerial survey and ground observations indicated that there were symptoms of thrips damage regionwide. The most serious damage occurred to sugarbushes in Danby, Landgrove, Peru, Dummerston and Londonderry, and maple stands in Halifax and on Pico Peak.

Seriously affected areas were monitored through the season. Even where initial symptoms were severe, there was additional leaf development after damage occurred. Crowns that had been thin appeared full later in the season. No refoliation was observed.

SAPSUCKING INSECTS, MIDGES & MITES

INSECT	HOST(S)	LOCALITY	REMARKS
Balsam Gall Midge *Paradiplosis tumifex*	Balsam Fir	Springfield	Light damage to individual trees.
Balsam Twig Aphid *Mindarus abietinus*	Balsam Fir	Springfield	Light damage to scattered Christmas trees.
Balsam Woolly Aphid *Adelges piceae*	Balsam Fir	Rutland County	
Cooley Spruce Gall Aphid *Adelges cooleyi*	Douglas Fir	Pownal	Christmas trees.
Eastern Spruce Gall Aphid *Adelges abietis*	White Spruce	Baltimore	Christmas trees.
Oystershell Scale *Lepidosaphes ulmi*		Windsor County	Heavy on understory in scattered locations.

SAPSUCKING INSECTS, MIDGES & MITES

INSECT	HOST(S)	LOCALITY	REMARKS
Pine Bark Aphid *Pineus strobi*	White Pine	Bennington, Rutland & Windsor Cos.	Common.
Pine Needle Midge *Contarinea baeri*			Not observed.
Pine Spittlebug *Aphrophora parallela*	Scots Pine	Rutland, Springfield, Ludlow	Damage to Christmas trees.
Root Aphid *Prociphilus americanus*			Not observed.
Spruce Spider Mite *Oligonychus ununguis*	Blue Spruce Balsam Fir	Rutland Springfield	Ornamental Moderate defoliation from previous damage

SAPSUCKING INSECTS, MIDGES & MITES

INSECT	HOST(S)	LOCALITY	REMARKS
Pear Thrips	Sugar Maple		See Write-up.

BUD, SHOOT & STEM INSECTS

INSECT	HOST(S)	LOCALITY	REMARKS
Balsam Shootboring Sawfly *Pleroneura bruneicornis*			Not observed.
Northern Pine Weevil *Pissodes approximatus*			Not observed.
Pales Weevil *Hylobius pales*			Not observed.
White Pine Weevil *Pissodes strobi*	White Pine	Throughout	Damage increasing.

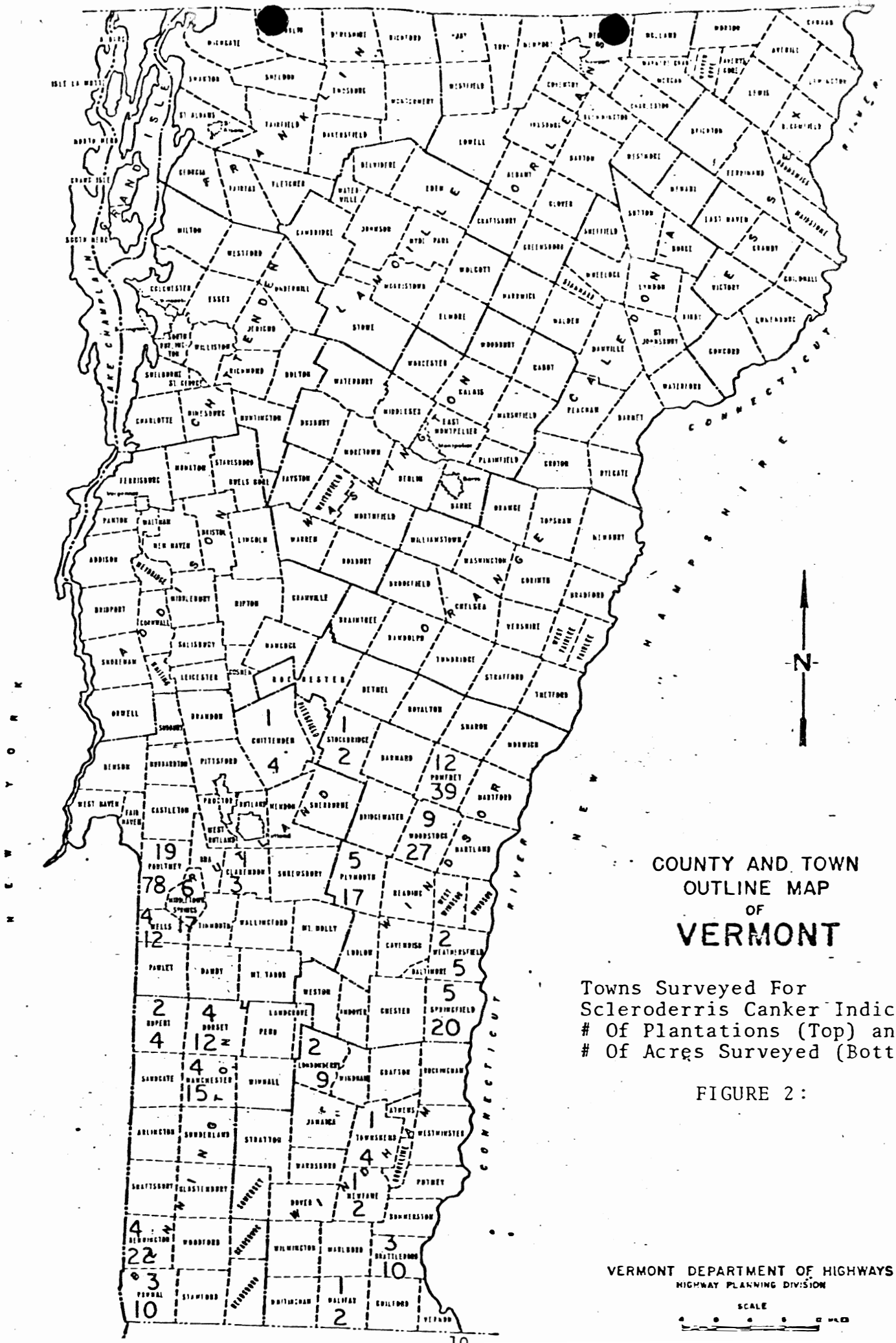
BARK BEETLES

INSECT	HOST(S)	LOCALITY	REMARKS
List any that were associated with or thought to be the cause of tree mortality			Not observed.

FOREST DISEASES

STEM DISEASES

Scleroderris Canker, cuased by Gremmeniella abietina, was not observed in southern Vermont. Because of wet springs in 1983 and 1984, leading to increased incidence of the disease in northern Vermont, a survey was carried out in the four southern counties to certify that they continue to be free of Scleroderris canker. At least five towns in each county were surveyed. In these towns all known red and scots pine plantations at least two acres in size, which were planted between 1960 and 1969, were inspected for the disease. No symptomatic trees were found. Towns inspected are indicated in Figure 2.


COUNTY AND TOWN
OUTLINE MAP
OF
VERMONT
Towns Surveyed For
Scleroderris Canker Indicating
Of Plantations (Top) and
Of Acres Surveyed (Bottom)
FIGURE 2:
VERMONT DEPARTMENT OF HIGHWAYS
HIGHWAY PLANNING DIVISION
SCALE
N
NEW YORK
CONNECTICUT RIVER
NEW HAMPSHIRE
LAKE CHAMPLAIN
GRAND ISLE
FRANKLIN
ORLEANS
ESSEX
CALEDONIA
WASHINGTON
ORANGE
WINDSOR
WINDHAM
RUTLAND
ADDISON
CHITTENDEN
LAMOILLE
BENNINGTON

STEM DISEASES

DISEASE	HOST(S)	LOCALITY	REMARKS
Beech Bark Disease *Cryptococcus fagisuga* and *Nectria coccinea* var. *faginata*	Beech	Throughout	Populations increasing on monitoring plots, in western part of region.
Cytospora Canker *Cytospora kunzei*			Not observed.
Dutch Elm Disease *Ceratocystis ulmi*	American Elm	Throughout	Increased dieback and mortality
Fireblight *Erwinia amylovora*	Mountain Ash	Springfield	Ornamental
Hypoxylon Canker *Hypoxylon pruinatum*		Throughout	
Scleroderris Canker *Gremmeniella abietina*			See write-up

STEM DISEASES

DISEASE	HOST(S)	LOCALITY	REMARKS
Verticillium Wilt *Verticillium albo-atrum*			Not observed.
White Pine Blister Rust *Cronartium ribicola*	White Pine	Throughout	Significant increase in fruiting cankers region-wide, especially where ribes are numerous.
Woodgate Gall Rust *Endocronartium harknessii*			Not observed.
Oak Wilt *Ceratocystis fagacearum*	Oak		No suspected infection centers observed during aerial surveys.
Brown Rot *Monilinia fructicola*	Sour Cherry	Wilmington	Ornamental

FOLIAGE DISEASES

DISEASE	HOST(S)	LOCALITY	REMARKS
Anthracnose *Gloeosporium* spp.			Not observed.
Lophodermium Needlecast *Lophodermium pinastri*	Scots Pine	Rutland	Christmas trees
Rhabdocline Needlecast *Rhabdocline pseudotsugae*			Not observed.
Rhizosphaera Needlecast *Rhizosphaera kalkhoffi*			Not observed.
Swiss Needlecast *Phaeocryptopus gaumani*			Not observed.
Naemacyclus Needlecast *Naemacyclus niveus*	Scots Pine	Springfield	Christmas trees

ROOT ROTS

DISEASE	HOST(S)	LOCALITY	REMARKS
Annosus Root Rot *Heterobasidion annosum*	Red Pine	Chester	Affected area in Chester Town Forest
Shoestring Root Rot *Armillaria mellea*	Red Spruce	Throughout	Associated with decline in Somerset and other locations.

DIEBACKS, DECLINES & ENVIRONMENTAL DISEASES

Place all the following that you observed in narrative form.

ASH DIEBACK is present throughout the region. An increase in dieback symptoms has been observed in Bennington County, where ash grows in groups. Ash should be thinned with the leaves on to accurately evaluate tree vigor.

BIRCH DECLINE

FROST DAMAGE from a hard frost on May 9 may have caused some damage. Symptoms are similar to thrips.

LARCH DECLINE occurred throughout with some increase in number of areas and trees affected in Bennington County and additional mortality in Whitingham.

MAPLE DECLINE is being monitored through several surveys. Field data is complete for a Forest Tent Caterpillar impact survey, and an update of the 1977 sugarbush decline survey. Aerial photographs were taken as the first step of a hardwood decline survey to be completed next year.

DIEBACKS, DECLINES & ENVIRONMENTAL DISEASES

DROUGHTY SITES were associated with increased sugar maple chlorosis in late summer throughout the region. Associated symptoms were premature autumn color and/or leaf fall. All size classes were affected.

WHITE PINE NEEDLE BLIGHT was observed throughout the region, with symptoms in Rutland and Bennington Counties more severe than 1984. Mortality on a three acre site in Arlington may be linked to this syndrome.

SALT INJURY is particularly severe along mountain access roadways. Softwood species are most heavily damaged.

WINDBURN caused decline symptoms continue to develop on red maple, beech, yellow birch and black cherry in areas of Glastonbury and Shaftsbury which were affected in 1982. Some decline may be linked to subsequent thinning and harvest operations.

NEEDLE BLIGHT was observed in a red and Norway spruce plantation in Mt. Holly.

SPRING FIRE led to late August dieback symptoms on 15 acres in Danby. The high intensity wildfire completely killed all understory species. Ambrosia beetles attacked overstory trees within days of the fire. Significant mortality is expected.

WET FEET during previous springs was responsible for pockets of mortality in Fraser and Balsam Fir Christmas tree plantations in Bennington and Windsor Counties.

SPRUCE DECLINE throughout the Green Mountain National Forest was mapped using 100% photo coverage by the U. S. Forest Service, and permanent spruce decline monitoring plots were established statewide. Details may be obtained from the U.S.F.S. State and Private Forestry in Durham, N. H.

ANIMAL DAMAGE

ANIMAL	SPECIES DAMAGED	LOCALITY	REMARKS
Deer	Regeneration		Less damage than in previous years.
Mouse			
Porcupine		Throughout	Population appears to be increasing based on complaints and roadkills observed.
Squirrel	Tubing	Londonderry	
Beaver		Rutland & Bennington Cos.	Aerial surveys indicate increased dieback and mortality from flooding of drainages by active colonies.